

SIGNAL DETECTION METHOD WITH HIGH DETECTION PROBABILITY AND LOW FALSE ALARM RATE

ABSTRACT OF THE DISCLOSURE

A signal detection method with high detection probability and low false alarm rate is provided for spread spectrum communication systems. The method includes steps of a) receiving discrete-time input signal, b) converting the input signal into a correlator output signal with finite number of values, c) selecting a maximum value and a minimum value from the magnitude of values, respectively, d) dividing the maximum value by the minimum value for obtaining an enhanced peak value of the correlator output signal, and e) comparing the enhanced peak value of the correlator output signal with a predetermined threshold, wherein the input signal is detected as a spread spectrum signal if the enhanced peak value of the correlator output signal is greater than or equal to the predetermined threshold, whereas the input signal is not detected as a spread spectrum signal if the enhanced peak value of the correlator output signal is less than the predetermined threshold. Simulation results show that the proposed method outperforms the conventional method.